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09/517,434	03/02/00	RASTEGAR J	13285

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PAUL J ESATTO JR
SCULLY SCOTT MURPHY & PRESSER
400 GARDEN CITY PLAZA
GARDEN CITY NY 11530

EXAMINER	
BURCH, M	
ART UNIT	**PAPER NUMBER**
3613	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary	Application No.	Applicant(s)	
	09/517,434	RASTEGAR ET AL.	
	Examiner	Art Unit	
	Melody M. Burch	3613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 March 2000* is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to because of hand-drawn figures and handwritten labels. Correction is required.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the

- The combination of mechanical linkage comprising the scissor linkages and the support means comprising a spring means and a linear actuator in series as claimed in claims 10 and 33 and its intervening claims;
- The combination of mechanical linkage comprising the scissor linkages and the support means comprising an elastic means as claimed in claims 11 and 34 and its intervening claims;
- The limitation of the tubular cavity being coiled in a helical manner as claimed in the 2nd line from the bottom of claim 18 as well as in claims 22 and 25;
- The limitation of the ramp in claims 23 and 48;
- The limitation of the bottom and top plates as claimed in claims 17, 22 and claim 44;
- The limitation in claim 8 wherein a first end of each of the first and second scissor sublinkages being fixed to the payload or a portion thereof;

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Objections

3. Claim 36 is objected to because of the following informalities: in line 1 "for" should be changed to --of--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 17, 22, 23, 25,44, 48 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re: claims 17, 22, 44. The limitation of a bottom plate fixed to the payload or base structure and a top plate movable relative to the bottom plate and fixed to the other of the payload or base structure.

Re: claims 23, 48. The limitation of the ramp.

Re: claim 25. The limitation of the payload and base structures being components of a rocket.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-26, 29, and 36-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claims 1, 36, and 39. It is unclear to the Examiner whether the Applicant is claiming the combination of a payload isolation system (apparatus/method) and a payload and base structure or the subcombination of a payload isolation system (apparatus/method) and its components. The payload and the base structure are recited as functional language in the preamble but are positively recited in the body of the claims.

Re: claims 4, 8, 29. The distinction between a parallelogram linkage/scissor linkage and a parallelogram sublinkage/scissor sublinkage is unclear since figure 1 element 105 and 104 represent the upper and lower parallelogram linkages (not sublinkages as claimed) which share a common member 107.

Re: claims 5 and 9. Claims 5 and 9 recite the limitation "the parallelogram linkages" in lines 1 and 2 from the bottom. There is insufficient antecedent basis for this limitation in the claim.

Re: claims 10 and 11. Claims 10 and 11 recite the limitation "the first or second common members" in lines 1 and 2 from the bottom of the claims. There is insufficient antecedent basis for this limitation in the claim.

Re: claim 21. The difference between the deformable mat of claim 21 and the support means of claim 1 is unclear. The specification describes the deformable member as being the support means.

Re: claim 23. The phrase "more or less" in line 8 does not define the metes and bounds of the claim.

Re: claim 39. The difference between the support adjustment means and the effective payload adjustment means is unclear to the Examiner. Examiner suggests numbering the elements clearly in the drawing.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-5, 8, 12, 13, 27-32, 35-38 rejected under 35 U.S.C. 102(b) as being anticipated by Macpherson.

Re: claims 1-4, 12, 13, 27-29, 35, 36. Macpherson shows in figure 2 a payload isolation system for isolating a payload such as a vehicle not shown from a base structure such as the ground upon which the payload is supported, the payload isolation system comprising: motion constraint means including links 38,36,26,16,42 for maintaining a parallel relationship between the payload and the base structure and support means 11 for providing vertical and/or lateral support of the payload relative to

the base structure such that the transmission of vertical and/or lateral vibration between the payload and the base structure are suppressed.

Re: claims 5, 30, and 37. At least one of the parallelograms includes the linkages 68,65 and a portion of links 26,38 which is non-parallel to the linkage including links 30,38,42,36.

Re: claims 8, 9, 31, and 32. The use of scissor construction is disclosed in col. 6 lines 15-23.

10. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sutcliffe et al. Sutcliffe et al. shows in figure 1 a payload isolation system for isolating a payload 10 from a base structure 12 upon which the payload is supported, the payload isolation system comprising: motion constraint means 18 for maintaining a parallel relationship between the payload and the base structure and support means 20,22,24 including actuators 22,24 for providing vertical and/or lateral support of the payload relative to the base structure such that the transmission of vertical and/or lateral vibration between the payload and the base structure are suppressed.

11. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Sutcliffe et al.

Re: claim 1. Sutcliffe et al. shows in figure 1 a payload isolation system for isolating a payload 10 from a base structure 12 upon which the payload is supported, the payload isolation system comprising: motion constraint means 22,24 for maintaining a parallel relationship between the payload and the base structure and support means 20 for providing vertical and/or lateral support of the payload relative to the base

structure such that the transmission of vertical and/or lateral vibration between the payload and the base structure are suppressed.

Re: claim 7. Sutcliffe et al. shows in figure 1 a damping means 18 for resisting relative displacement and or velocity between the payload and base structure.

12. Claims 1, 19-21, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Whelpley et al.

Re: claim 1. Whelpley et al. show in figure 1 a payload isolation system 10 for isolating a payload 14 from a base structure 12 upon which the payload is supported, the payload isolation system comprising: motion constraint means 86,88 for maintaining a parallel relationship between the payload and the base structure and support means 44,87 for providing vertical and/or lateral support of the payload relative to the base structure such that the transmission of vertical and/or lateral vibration between the payload and the base structure are suppressed.

Re: claims 19-21 and 23. Whelpley et al. shows in figure 1 a payload adjustment means 20,16,30 comprising a support adjustment means 16, a feedback means 20,30, a deformable mat 86 having at least one internal tubular internal cavity 88, a gas source 18.

13. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Marshall. Marshall shows in figure 2 a payload isolation system for isolating a payload 36 from a base structure 96 upon which the payload is supported, the payload isolation system comprising: motion constraint means 100 for maintaining a parallel relationship between the payload and the base structure and support means 28 for providing vertical and/or

lateral support of the payload relative to the base structure such that the transmission of vertical and/or lateral vibration between the payload and the base structure are suppressed.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sutcliffe et al. in view of Nathan. Nathan teaches in figures 1-3 the use of a resilient support means comprising a deformable mat having at least one internal tubular cavity 5 such that the deformable mat exhibits nonlinear elastic characteristics as shown in figure 5. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the resilient support of Sutcliffe et al. with that of Nathan in order to provide a greater range of deformation under certain loads.

16. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sutcliffe et al. in view of Goldbach et al. Golbach et al. shows in figure 2 a support means 1 comprising a bottom plate or bottom of two-part casing 3, a top plate or top of two-part casing 3, the support means 1 further comprising a compressible material 10 disposed in a space between the tip and bottom plates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the resilient

support of Sutcliffe et al. with a compressible material having top and bottom plates, as taught by Goldbach et al. in order to provide rigid protection of the outer surfaces of the compressible material to prevent damage.

17. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sutcliffe et al. in view of Goldbach et al. as applied to claim 17 above, and further in view of Ganser. Ganser teaches in the figure an elastomeric tubular element 6 coiled in a helical manner which may be extruded as taught in col. 1 lines 9-11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the elastomeric element of Sutcliffe et al., as modified, to have been extruded and coiled in a helical manner as taught by Ganser, in order to provide a simple means of forming the element depending on manufacturing step requirements and in order to provide large amounts of elastomeric element in a confined space.

18. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whepley et al. in view of Ivers et al. Whepley et al. describes the invention substantially as set forth above including a distance signal generation means and a transducer, but does not disclose the remaining components of the feedback means. Ivers et al. teaches in figure 6 the use of a first low pass filter 94, a summer 92, a gain means 98, and a second low pass filter 96. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the feedback means of Whelpley et al. with the remaining components of the feedback means, as taught by Ivers et al., in order to provide an adjustably variable isolation system.

19. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sutcliffe et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the payload isolation system of Sutcliffe in the rocket environment in order to isolate vibrating rocket components. It is inherent that the effective weight (mg) of the payload will vary with time since the value of g will change during the rocket course.

20. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall in view of Nathan. Nathan teaches in figures 1-3 the use of a resilient support means comprising a deformable mat having at least one internal tubular cavity 5 such that the deformable mat exhibits nonlinear elastic characteristics as shown in figure 5. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the resilient support of Whelpley et al. with a deformable member having nonlinear characteristics, as taught by Nathan, in order to provide specific deformation characteristics under certain load conditions.

21. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert in view of Nathan. Schubert shows in figure 1 a support apparatus comprising a deformable member 30, a support adjustment means 10 for supporting the effective payload 12 weight and effective payload adjustment means 24 for adjusting the level of support of the support means in response to a varying effective payload weight. Nathan teaches in figures 1-3 the use of a resilient support means comprising a deformable mat having at least one internal tubular cavity 5 such that the deformable mat exhibits nonlinear elastic characteristics as shown in figure 5. It would have been obvious to

one of ordinary skill in the art at the time the invention was made to have modified the resilient support of Whelpley et al. with a deformable member having nonlinear characteristics, as taught by Nathan, in order to provide specific deformation characteristics under certain load conditions.

22. Claims 39-41 and 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whelpley et al. in view of Nathan. Whelpley et al. show in figure 1 a support apparatus comprising a deformable member 86, an effective payload adjustment means 44,87 and a support adjustment means 16, 20, 30, but does not disclose that the deformable member exhibits nonlinear elastic characteristics. Nathan teaches in figures 1-3 the use of a resilient support means comprising a deformable mat having at least one internal tubular cavity 5 such that the deformable mat exhibits nonlinear elastic characteristics as shown in figure 5. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the resilient support of Whelpley et al. with a deformable member having nonlinear characteristics, as taught by Nathan, in order to provide specific deformation characteristics under certain load conditions.

23. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whelpley et al. in view of Nathan as applied to claim 40 above, and further in view of Marshall. Marshall teaches in the figure on the front of the patent a plurality of internal tubular cavities shown inside the top and bottom elements 28. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the deformable member of Whelpley et al., as modified, to include a

plurality of internal tubular cavities, as taught by Marshall, in order to increase the filling capacity of the deformable member.

24. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert in view of Nathan as applied to claim 39 above, and further in view of Goldbach et al. Golbach et al. shows in figure 2 a support means 1 comprising a bottom plate or bottom of two-part casing 3, a top plate or top of two-part casing 3, the support means 1 further comprising a compressible material 10 disposed in a space between the tip and bottom plates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the resilient support of Sutcliffe et al. with a compressible material having top and bottom plates, as taught by Goldbach et al. in order to provide rigid protection of the outer surfaces of the compressible material to prevent damage.

25. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Whelpley et al. in view of Nathan, as applied to claim 46 above, and further in view of Ivers et al. Whepley et al. describes the invention substantially as set forth above including a distance signal generation means and a transducer, but does not disclose the remaining components of the feedback means. Ivers et al. teaches in figure 6 the use of a first low pass filter 94, a summer 92, a gain means 98, and a second low pass filter 96. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the feedback means of Whelpley et al. with the remaining components of the feedback means, as taught by Ivers et al., in order to provide an adjustably variable isolation system.

Allowable Subj ct Matter

26. Claims 9-11, 22, and 45 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents: 5845896 to Riad teaches in figure 2 a spring in series with a linear actuator, 5564537 to Shoureshi teaches the use of a motor, 6196531 to Makino et al. and JP-61175332 teach the use of deformable tubular shaped mats, 4270393 to Osborne et al., 6241059 to Fujita et al., 5890695 to Brewer III, 3322379 to Flannelly, and 5315890 to Long all teach the use of isolation systems involving linkages, and 5370352 to Platus, 5310157 to Platus, 6059274 to Owen et al., 4033541 to Malueg, 5305981 to Cunningham et al., 5794909 to Platus et al., 6022005 to Gran et al., 5645260 to Falangas, 4699257 to Lloyd, 5971375 to Simonian et al., 3794277 to Smedley et al., and JP-6217437 teach similar inventions.

28. The declaration submitted with regards to the missing inventor signature has been reviewed by the Examiner.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Oberleitner can be reached on 703-308-2569. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

30. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

mmb
June 29, 2001

ROBERT J. OBERLEITNER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600